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(54) **INSERTING DEVICE FOR DEFORMABLE  
 INTRAOCULAR LENS**

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(\*) **Notice:** This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(52) **U.S. Cl.** ..... **606/107**

(58) **Field of Search** ..... 606/107, 108,  
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#### **(56) References Cited**

##### **U.S. PATENT DOCUMENTS**

4,573,998 A	3/1986	Mazzocco	
4,681,102 A	7/1987	Bartell	
5,098,439 A	3/1992	Hill et al.	
5,190,552 A	3/1993	Kelman	
5,496,328 A *	3/1996	Nakajima et al. ....	606/107
5,616,148 A *	4/1997	Eagles et al. ....	606/107

##### **FOREIGN PATENT DOCUMENTS**

JP	58-146346	8/1983
JP	5-103803	4/1993
JP	5-103808	4/1993
JP	5-103809	4/1993
JP	7-23990	1/1995
JP	7-23991	1/1995

\* cited by examiner

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#### **(57) ABSTRACT**

An insertion device for inserting a deformable intraocular lens into the eye. The insertion device has a an enclosing member that is attached to the body of the insertion device and that has two hinge portions at a lens receiving section. Further, a retainer member is fitted onto the enclosing member and a holder fitted onto the body. The deformable intraocular lens is placed in the lens receiving section after the enclosing member is opened. When the holder is retracted, the intraocular lens is deformed by a tapered inner wall portion formed at a the tip end of the holder, so that the exterior size of the lens is reduced. Subsequently, a push rod supported by the body is advanced in order to insert the lens into the eye.

**37 Claims, 13 Drawing Sheets**

